

Remarks/Arguments

In the non-final Office Action dated September 3, 2008, it is noted that claims 1-21 are pending; that objection has been raised with respect to the claims 1, 10, and 21; that claims 1-21 stand rejected under 35 U.S.C. §112; that claims 20-21 stand rejected under 35 U.S.C. §101; that claims 1-4, 7-9, 11-14, 17-18, and 20 stand rejected under 35 U.S.C. §102; that claims 5-6, 10, 15-16, 19, and 21 stand rejected under 35 U.S.C. §103; that the drawings filed on January 10, 2006 have been accepted by the Examiner; that the claim for foreign priority under 35 U.S.C. §119 has been acknowledged; and that all certified copies of priority documents have been received.

By this response, claims 20 and 21 have been cancelled without prejudice; claims 1 and 11 have been amended in their respective preambles by deleting the term “simplifying”; reference identifiers and numerals have been deleted from claims 1-3, 5, 9-16, and 18-19; claims 1, 2, 4-7, and 9-19 have been amended to clarify the antecedent basis for the term “properties”; claims 9 and 18 have been amended to be dependent from claims 1 and 11, respectively; and claim 10 has been amended to be dependent from claim 9 rather than claim 10. No new matter has been added.

Objection to the Claims

Objection has been raised against claim 1, 10, and 21 in the present Office Action. Claim 1, as amended, now calls for “[m]ethod of embedding watermarks”, as shown above. Claim 10 has been amended to be dependent from claim 9, as shown above. Claim 21 has been cancelled without prejudice. These amendments are believed to obviate the grounds for objection. Withdrawal of the objections to the specification is respectfully requested.

Rejection of Claims 20 and 21 under 35 U.S.C. §101

Claims 20-21 stand rejected under 35 U.S.C. §101. Since claims 20-21 have been cancelled, it is believed that this rejection is moot.

Rejection of Claims 1-21 under 35 U.S.C. §112

Claims 1-21 stand rejected under 35 U.S.C. §112, second paragraph. As noted above, claims 20-21 have been cancelled. This rejection is respectfully traversed.

Claims 1, 2, 4, 5, 6, and 7 now call for “watermarking properties” rather than “signal dependent properties”. The watermarking properties relate to the signal(s) p shown in the figures and the specification. In a similar manner, claims 9 and 10 also call consistently for “watermarking properties”. Further, claims 11-19 now call consistently for “signal dependent watermarking properties”.

Contrary to the assertion in the present Office Action on page 4, the synonymous terms of watermarking properties and signal dependent watermarking properties have been described well by applicants in the specification. In the original specification beginning at page 7, line 3 et seq., applicants describe the watermarking properties and their dependence on the media signal as follows:

The scaling factor α is controlled by a signal $p[n]$, which signal is made up of the watermarking properties depending on the media signal. These properties are in this example decided based on a psycho-acoustic model of the human hearing system in order to ensure that the watermark is not perceptible to a user or client or provided beneath a masking threshold of the signal $x[n]$. These properties, which are highly dependent on the media signal x , are therefore calculated beforehand and stored in the properties store in Fig. 1. The calculation of these properties is quite complex and time demanding, but is however only needed to be made once for each signal. Also the bandpass filtered signal $x_b[n]$ is fixed in the sense that it is not influenced by the watermark and can just as well be calculated beforehand and stored in the properties store. This will make the watermarking unit simpler in structure but also require additional storage space in the server. It should be realized that the watermarking properties dependent on the media signal are not limited to being based on a psycho-acoustic model of the human hearing system. In case the media signal is a still image or a video signal an appropriate psycho-visual model of the human visual system is used. The model is therefore a model of a human sensing system. More detail about the specific watermarking technique shown in Fig. 3 can be found in the document, “A temporal domain audio watermarking technique”, by Aweke Negash Lemma, Javier Aplea, Werner Oomen and Leon van de Kerkhof, IEEE Transactions on Signal Processing, April 2003, Vol. 51, page 1088-1097, which is herein incorporated by reference.

Also, in the original specification at page 9, lines 18-21, applicants further describe the watermarking properties and their dependence on the media signal as follows:

A content owner can furthermore inspect the effect of the watermark on the content and then manually modify specific

features p such that the watermark energy is weaker or stronger in different frames of the signal. In this way he can ensure that the watermark is not perceptible.

It should be noted that dependent claims 7 and 17 include limitations that further define the watermarking properties. For example, in claim 7, it is stated that “the watermarking properties are based on a perceptual model of a human sensing system.” Claim 17 includes a similar limitation to the one reproduced above from claim 7.

In view of the descriptions reproduced above and in view of the limitations already present in certain dependent claims, it is submitted that the recitation of either “watermarking properties” or “signal dependent watermarking properties” is clear and definite. Therefore, it is believed that claims 1-19 are allowable under 35 U.S.C. §112. Withdrawal of this rejection is respectfully requested.

Cited Art

The following references have been cited and applied against the claims in the present Office Action: U.S. Patent Application Publication No. 2001/0025341 to Marshall (hereinafter “*Marshall*”); U.S. Patent Application Publication No. 2002/0120849 to McKinley et al. (hereinafter “*McKinley*”); and PCT Application Publication No. WO 03/055130 A1 to Tian et al. (hereinafter “*Tian*”).

Rejection of Claims 1- 4, 7-8, 11-14, and 17 under 35 U.S.C. §102

Claims 1- 4, 7-8, 11-14, and 17 stand rejected under 35 U.S.C. §102 as being anticipated by Marshall. This rejection is respectfully traversed.

Claims 1 and 11 are independent claims. Claim 14 is an apparatus claim that includes limitations substantially similar to those found in method claim 1. Claims 2-4 and 7-8 depend ultimately from claim 1; and claims 12-14 and 17 depend ultimately from claim 11. As such, the remarks below, while confined to claim 1, will be understood to pertain equally to claim 11 without further repetition.

Claim 1 calls for:

Method of embedding watermarks in different copies of a media signal, comprising:

- determining watermarking properties dependent on the media signal, and*
- storing the watermarking properties, such that the watermarking properties can be used when embedding unique watermarks in different copies of the media signal.*

Marshall does not teach, show, or suggest “determining watermarking properties dependent on a media signal”, as defined in the claims. Marshall appears to select those sections of a media signal that are suitable for accepting the addition of a watermark signal. *See Marshall at paragraphs [0034] – [0037]*. Those selected sections are not stored by Marshall. Rather, Marshall makes a set of multiple copies of each selected section of the media signal. Then, Marshall applies a different elementary watermark to each copy within a set of copies. It is only after the original media signal has been watermarked that the watermarked set of copies is stored. Marshall is not determining or storing “determining watermarking properties dependent on a media signal”, as defined in the claims. According to Marshall, he only stores the actual media signal itself after it has been watermarked. Marshall does not determine or store watermarking properties that are dependent on the media signal. Therefore, Marshall does not teach, show, or suggest all the elements of the claims.

In light of these remarks, it is believed that independent claims 1 and 11 and the claims dependent thereon would not have been anticipated by Marshall and would not have been obvious to a person of ordinary skill in the art upon a reading of Marshall, either separately or in combination with the known art. Thus, it is submitted that claims 1-4, 7-8, 11-14, and 17 are allowable under both 35 U.S.C. §103 and 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Rejection of Claims 9, 18, and 20 under 35 U.S.C. §102

Claims 9, 18, and 20 stand rejected under 35 U.S.C. §102 as being anticipated by McKinley. Claim 20 has been cancelled. Claims 9 and 18 are now dependent from claims 1 and 11, respectively. This rejection is respectfully traversed.

Claims 9 and 18 are now amended to be dependent claims. Claim 18 is an apparatus claim that includes limitations substantially similar to those found in method claim 9. As such,

the remarks below, while confined to claim 9, will be understood to pertain equally to claim 18 without further repetition.

Claim 9 calls for:

The method according to claim 1 further comprising:

- receiving the media signal together with the watermarking properties dependent on the media signal, and*
- embedding a watermark based on the watermarking properties in a copy of the media signal.*

McKinley does not teach, show, or suggest the limitations in base independent claim 1. Nor does McKinley cure the defects noted above for Marshall in claim 1, from which claim 9 depends. Even if McKinley's perceptual mask is assumed solely for the sake of argument to be analogous to applicants' watermarking properties, there is no teaching, showing, or suggestion that the perceptual mask of McKinley is stored as required by the limitations in claim 1. McKinley simply generates the perceptual mask and applies it to controlling the watermark application. It is never stored by McKinley. Therefore, McKinley does not teach, show, or suggest all the elements of the claims.

In light of these remarks, it is believed that dependent claims 9 and 18 would not have been anticipated by McKinley and would not have been obvious to a person of ordinary skill in the art upon a reading of McKinley, either separately or in combination with the known art. Thus, it is submitted that claims 9 and 18 are allowable under both 35 U.S.C. §103 and 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Rejection of Claims 5 and 15 under 35 U.S.C. §103

Claims 5 and 15 stand rejected under 35 U.S.C. §103 as being unpatentable over Marshall in view of McKinley. This rejection is respectfully traversed.

Claim 5 depends directly from claim 2 and includes the limitations of claims 1 and 2. Claim 15 depends directly from claim 12 and includes the limitations of claims 11 and 12.

As already discussed above, neither Marshall nor McKinley teach, show, or suggest all the limitations of the base independent claims, namely, claims 1 and 11. Marshall and McKinley separately exhibit the same defects when applied to the base independent claims. Therefore, the combination of Marshall and McKinley fail to cure their respective defects because their defects are the same. As a result, the combined references of Marshall and McKinley fail to teach, show, or suggest all the limitations of the dependent claims based on claims 1 and 11.

In light of these remarks directly above and in view of the prior remarks made with respect to claim 1, it is believed that dependent claims 5 and 15 would not have been obvious to a person of ordinary skill in the art upon a reading of Marshall and McKinley, either separately or in combination. Thus, it is submitted that claims 5 and 15 are allowable under 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Rejection of Claims 6 and 16 under 35 U.S.C. §103

Claims 6 and 16 stand rejected under 35 U.S.C. §103 as being unpatentable over Marshall in view of McKinley and further in view of Tian. This rejection is respectfully traversed.

Claim 6 depends directly from claim 5 and includes the limitations of claims 1, 2, and 5. Claim 16 depends directly from claim 15 and includes the limitations of claims 11, 12, and 15.

As already discussed above, neither Marshall nor McKinley teach, show, or suggest all the limitations of the base independent claims, namely, claims 1 and 11. Marshall and McKinley separately exhibit the same defects when applied to the base independent claims. Therefore, the combination of Marshall and McKinley fail to cure their respective defects because their defects are the same. As a result, the combined references of Marshall and McKinley fail to teach, show, or suggest all the limitations of the dependent claims based on claims 1 and 11.

Tian has been added to the combined Marshall and McKinley references apparently to provide support for the admitted missing teachings of losslessly encoding the signal dependent watermarking properties in the media signal. Even if Tian's auxiliary data is assumed solely for the sake of argument to be analogous to applicants' signal dependent watermarking properties, there is no teaching, showing, or suggestion that the auxiliary data of Tian is stored as required by the limitations in claims 1 and 11. Tian does not cure the basic defects of Marshall and McKinley with respect to the base independent claims 1 and 11. As a result, the combined references of Marshall, McKinley, and Tian fail to teach, show, or suggest all the limitations of the dependent claims based on claims 1 and 11.

In light of these remarks directly above and in view of the prior remarks made with respect to claim 1, it is believed that dependent claims 6 and 16 would not have been obvious to a person of ordinary skill in the art upon a reading of Marshall, Tian, and McKinley, either separately or in combination. Thus, it is submitted that claims 6 and 16 are allowable under 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Rejection of Claims 10, 19, and 21 under 35 U.S.C. §103

Claims 10, 19, and 21 stand rejected under 35 U.S.C. §103 as being unpatentable over McKinley in view of Tian. Claim 21 has been cancelled. This rejection is respectfully traversed.

Claim 10 depends directly from dependent claim 9 and includes the limitations of claims 1 and 9. Claim 19 depends directly from claim 18 and includes the limitations of claims 11 and 18.

As already discussed above, neither Tian nor McKinley teach, show, or suggest all the limitations of the base independent claims, namely, claims 1 and 11. Tian and McKinley separately exhibit the same defects when applied to the base independent claims. Therefore, the combination of Tian and McKinley fail to cure their respective defects because their defects are the same. As a result, the combined references of Tian and McKinley fail to teach, show or suggest all the limitations of the dependent claims based on claims 1 and 11.

In light of these remarks directly above and in view of the prior remarks made with respect to claim 1, it is believed that dependent claims 10 and 19 would not have been obvious to a person of ordinary skill in the art upon a reading of Tian and McKinley, either separately or in combination. Thus, it is submitted that claims 10 and 19 are allowable under 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that all the claims pending in this patent application are in condition for allowance. Reconsideration and allowance of all the claims are respectfully solicited.

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In the event there are any errors with respect to the fees for this response or any other papers related to this response, the Director is hereby given permission to charge any shortages and credit any overcharges of any fees required for this submission to Deposit Account No. 14-1270.

Respectfully submitted,

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